

IN THE CLAIMS:

The following is a complete listing of the claims and reflects all changes currently being made to the claims. This listing supersedes all earlier versions and all earlier listings of the claims:

1. (Currently Amended) A wavelength division multiplexed optical system, comprising:

a first optical node including a transponder comprising a frame memory pre-stored with at least three pre-defined test frames, ~~each test frame being an error frame or a valid frame~~ including a valid working frame, a valid service frame, and an error frame, and also including a management interface controller adapted to selectively output from the frame memory one of the at least three test frames pre-stored in the frame memory as a test signal;

a second optical node including a transponder having a monitoring circuit to monitor a received test signal; and

a light path through which at least optical communications normally are exchanged between the first and second optical nodes,

wherein the light path is tested by the monitoring circuit monitoring a bit error rate of the test signal in response to receiving the test signal from the first optical node through the light path.

2. (Cancelled).

3. (Currently Amended) The optical system of Claim 1, wherein the valid working frame is a valid client signal.

4. (Original) The optical system of Claim 3, wherein the valid client signal is one of a valid SONET frame, an ATM cell and an IP packet.

5. (Currently Amended) The optical system of Claim 1, wherein the valid service frame is a valid maintenance signal.

6. (Previously Presented) The optical system of Claim 5, wherein the valid maintenance signal is a SONET alarm indication signal.

7. (Previously Presented) The optical system of Claim 1, wherein the light path is tested prior to connecting client equipment to the first and second optical nodes.

8. (Previously Presented) The optical system of Claim 1, wherein the error frame includes predetermined errors.

9. (Currently Amended) The optical system of Claim 1, further comprising client equipment connected to the first optical node, the client equipment normally exchanging optical communications with the first optical node, wherein the first optical node further includes a communications blocker which blocks the optical

communications from being normally exchanged with the client equipment when the ~~test signal generator generates~~ management interface controller outputs the test signal.

10. (Currently Amended) An optical line terminal comprising:  
a transponder including at least a transmitter, a receiver,  
a frame memory pre-stored with at least three predefined test frames, ~~each test frame being an error frame or a valid frame~~ including a valid working frame, a valid service frame, and an error frame, and a management interface controller adapted to selectively output from the frame memory one of the at least three test frames pre-stored in the frame memory as a test signal, the transponder also including a monitoring circuit connected to the receiver to monitor a bit error rate of a received test signal at an input of the receiver, wherein the transmitter transmits signals applied to an input of the transmitter; and

a switch, operable either to couple a signal output by the receiver to the input of the transmitter, or to couple the test signal to the input of the transmitter.

11. (Currently Amended) A wavelength division multiplexed optical system, comprising:

an optical node including a transponder comprising a frame memory pre-stored with at least three predefined test frames, ~~each test frame being an error frame or a valid frame~~ including a valid working frame, a valid service frame, and an error frame, and a management interface controller adapted to selectively output from the frame memory one of the at least three test frames pre-stored in the frame memory as a test

signal;

client equipment including a monitoring circuit to monitor a received test signal; and

an optical path through which at least optical communications normally are exchanged between the optical node and the client equipment,

wherein the optical path is tested by monitoring a bit error rate of the test signal outputted by the optical node and received by the monitoring circuit of the client equipment through the optical path.

12-29. (Canceled).

30. (Previously Presented) The optical system of Claim 1, wherein the transponder of the first optical node also has another monitoring circuit to monitor a test signal received thereby, the transponder of the second optical node also comprises a test signal generator to output another test signal, and the monitoring circuit of the first optical node tests the light path by monitoring a quality of the test signal generated in the second optical node and provided to the monitoring circuit of the first optical node through the light path.

31. (Previously Presented) The optical system of Claim 30, wherein the light path includes at least one loopback mechanism which directs the test signal outputted by one of the first and second optical nodes to the monitoring circuit of a same one of the first and second optical nodes, for monitoring therein.

32. (Previously Presented) The optical system of Claim 31, wherein the light path also includes at least one other optical node, and the loopback mechanism is included in the at least one other optical node.

33. - 36. (Cancelled).

37. (Currently Amended) A method for operating a wavelength division multiplexed optical communication system, comprising:  
generating a test signal by selectively outputting from a frame memory one of at least three predefined test frames pre-stored in the frame memory, ~~each test frame being an error frame or a valid frame~~ including a valid working frame, a valid service frame, and an error frame;

transmitting the test signal generated in the generating from a first optical node to a second optical node by way of a light path through which at least optical communications normally are exchanged between the first and second optical nodes; and  
determining if there is a fault condition in the light path based on a bit error rate of the test signal received at the second optical node.

38. (Cancelled).

39. (Currently Amended) The method of Claim 37, wherein the valid working frame is a valid client signal.

40. (Previously Presented) The method of Claim 39, wherein the valid client signal is one of a valid SONET frame, an ATM cell and an IP packet.

41. (Previously Presented) The method of Claim 37, wherein the valid service frame is a valid maintenance signal.

42. (Previously Presented) The method of Claim 41, wherein the valid maintenance signal is a SONET alarm indication signal.

43. (Previously Presented) The method of Claim 37, wherein the light path is tested prior to connecting client equipment to the first and second optical nodes.

44. (Previously Presented) The method of Claim 37, wherein the error frame includes predetermined errors.

45. - 48. (Cancelled).